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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/100,799	06/19/1998	HIROAKI KUBO	05058/71301	8949

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EXAMINER	
VILLECCO, JOHN M	
ART UNIT	**PAPER NUMBER**
2612	

DATE MAILED: 01/11/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/100,799	KUBO, HIROAKI	
	Examiner	Art Unit	
	John M. Villecco	2612	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *03 September 2004*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☐ Claim(s) *1-43* is/are pending in the application.

4a) Of the above claim(s) *1-9* is/are withdrawn from consideration.

5)☒ Claim(s) *16-38* is/are allowed.

6)☒ Claim(s) *10-15 and 39-43* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *19 June 1998* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed September 3, 2004 have been fully considered but they are not persuasive.

2. Regarding claims 1 and 39, applicant has amended the claims to recite the limitation of the recorder recording image data into a specified storage medium. Applicant argues that one of ordinary skill in the art would not interpret the printer to be a recorder. However, as per MPEP §2111, claims must be given the broadest reasonable interpretation. It is not unreasonable that a printer could be interpreted to be a recorder since printer record information onto a sheet of paper, or the like, for storage. Furthermore, the applicant's amendment, which specifies that the recorder records image data into a storage medium, does not sufficiently overcome the Mahmoodi reference. As disclosed in column 7, lines 32-37, Mahmoodi discloses that the laser imager records the image data onto several different types of film. Given its broadest interpretation, it is reasonable to call the film to which the image is being stored, the storage medium, since data is being stored onto the film.

3. For the reasons stated above, the rejection from the previous office action will be repeated.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. **Claims 10 and 39 are rejected under 35 U.S.C. 102(e) as being anticipated by Mahmoodi (U.S. Patent No. 5,774,601).**

6. Regarding ***claim 10***, Mahmoodi discloses a system for adaptive interpolation of image data. More specifically, Mahmoodi discloses an image capturing device (col. 6, lines 35-43), a laser printer (26), which is interpreted to be the recorder, a display (24), an interpolation processor (20), and an output media selector (16) and interpolation kernel lookup table memory (18) for changing an interpolation process by the interpolation processor depending on the selected output media. The interpolation processor (20) selects a first interpolation process to apply to the pixel data when it is to be displayed and a second interpolation process to apply to the pixel data when it is to be recorded by the laser printer (col. 6, line 51 to column 7, line 42). The interpolation processor interpolates unknown pixels from the pixels of the image data. Furthermore, as disclosed in column 7, lines 32-37, Mahmoodi discloses that the laser imager records the image data onto several different types of film. Given its broadest interpretation, it is reasonable to call the film to which the image is being stored, the storage medium, since data is being stored onto the film.

7. ***Claim 39*** is considered substantively equivalent to claim 10. Please see the discussion of claim 10 above.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

9. Claims 11 and 40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mahmoodi (U.S. Patent No. 5,774,601) in view of Lapidous (U.S. Patent No. 5,793,379).

10. Regarding ***claim 11***, Mahmoodi fails to specifically disclose that the interpolation for displaying is performed faster than for the recording. However, Lapidous discloses that it is well known in the art to perform interpolation processing for a displayed image as fast as possible. More specifically, Lapidous discloses that a more complicated interpolation requires more processing time which may cause the display to lose frames and the present an amateurish appearing output (col. 7, lines 33-38). Also, see column 10, lines 9-21. Although, not specifically disclosed, one of ordinary skill in the art at the time the invention was made would have found it obvious to allow a recording of an image to be interpolated at a slower rate since one would like to record the highest quality image. Therefore, one of ordinary skill in the art would have found it obvious to display the image at a faster speed than recording so that a higher quality image can be recorded.

11. Claim 40 is considered substantively equivalent to claim 11. Please see the discussion of claim 11 above.

12. Claims 12-14 and 41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mahmoodi (U.S. Patent No. 6,466,263) in view of Lapidous (U.S. Patent No. 5,793,379) and further in view of Haruki (U.S. Patent No. 5,990,949).

13. Regarding ***claim 12***, as mentioned above in the discussion of claim 10, Mahmoodi discloses all of the limitations of the parent claim. However, Mahmoodi fails to specifically disclose a gamma correction section for correction a gradation characteristic between recording and displaying. Haruki, on the other hand, discloses that different gamma corrections are carried out for images that are to be displayed on an LCD (36) than image signals that are not. The second gamma correction circuit (24) outputs a different gamma correction for an image to be displayed on an LCD while the first gamma corrected image is sent to the flash memory (28). The ability to apply various gamma corrections to an image depending upon where the image is to be sent allows for a better image on the display device. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide a gamma correction characteristic depending upon whether the image is to be recorded or displayed.

14. As for ***claim 13***, Haruki discloses that a different gradation characteristic is given to an image signal that is to be sent to an LCD (36) than to an image signal that is to be sent to the flash memory (28).

15. Regarding ***claim 14***, Haruki discloses an LCD (36) on the camera for displaying the image.

16. ***Claim 41*** is considered a method claim corresponding to claim 12. Please see the discussion of claim 12 above.

17. Claims 15, 42, and 43 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mahmoodi (U.S. Patent No. 6,466,263) in view of Hayashi (U.S. Patent No. 5,734,427).

18. Regarding ***claim 15***, as mentioned above in the discussion of claim 10, Mahmoodi discloses all of the limitations of the parent claim. However, Mahmoodi fails to explicitly state that interpolation is performed for each of the colors of the image data. Hayashi, on the other hand, discloses an interpolation portion corresponding to each color in the image. Hayashi includes multipliers 213, 214, 216, 382, 384, and 386 for interpolating each of the red, blue and green components of the image. Clearly, this is a well known way of performing interpolation in an image sensor. By performing this type of interpolation, image data for each of the colors can be found for each of the locations, thereby forming a higher resolution color image. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to interpolate for each of the colors of the image data.

19. As for ***claims 42 and 43***, Mahmoodi fails to disclose that the device interpolates color image data generated using a Bayer array. Hayashi, however, discloses the ability to interpolate color image data using a Bayer array (col. 12, line 34). It is well known in the art that color images are more visually pleasing. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to generated a color image using a Bayer array so that a more visually appealing image is formed.

Allowable Subject Matter

20. Claims 16-38 are allowed.

21. Regarding ***claim 16***, the primary reason for indication of allowable subject matter is that the prior art does not teach nor reasonably suggest an imaging device that corrects for both a frequency characteristic and a gradation characteristic according to the image recording mode.

22. As for ***claim 33 and 37***, the primary reason for indication of allowable subject matter is that the prior art fails to teach or reasonably suggest executing an interpolation process based on a selected compression rate.

23. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any response to this final action should be mailed to:

Box AF
Commissioner of Patents and Trademarks
Washington, D.C. 20231

or faxed to:

(703) 308-6306, (for formal communications; please mark "**EXPEDITED PROCEDURE**"; for informal or draft communications, please label "**PROPOSED**" or "**DRAFT**")

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington. VA., Sixth Floor (Receptionist).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to John M. Villecco whose telephone number is (703) 305-1460. The examiner can normally be reached on Monday-Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wendy Garber can be reached on (703) 305-4929. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

John M. Villecco
December 29, 2004

WENDY R. GARBER
SUPERVISORY PATENT EXAMINER
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